

Applicants: FLORIAN KERN ET AL.  
U.S. Application No.: 09/600,564  
Combined Amendment and Election of Species

### Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### Listing of claims:

Claim 1. (Currently Amended)           Peptides having the sequence (I)

R<sub>N</sub> - Ala Arg Ala Lys Lys Asp Glu Leu Arg Arg Lys Met Met Tyr Met- R<sub>C</sub> (I) (SEQ ID No. 2)

or peptide derivatives thereof, wherein

R<sub>N</sub> represents -H or an amino protective group, or at least one further amino acid outside the peptide or peptide derivative;

R<sub>C</sub> represents -OH or a carboxy protective group, or at least one further amino acid outside the peptide or peptide derivative;

wherein said peptide derivatives have a deletion, insertion or substitution of one, two or three amino acids of sequence (I), or sequence (I) is truncated to nine contiguous amino acids, the deletion being an N-terminal and/or C-terminal deletion; and

wherein said peptide derivatives essentially have the functionality of the peptide of sequence (I) or of one of the following peptides:

Glu Leu Arg Arg Lys Met Met Tyr Met (SEQ ID No. 9)

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Asp Glu Leu Arg Arg Lys Met Met Tyr (SEQ ID No. 10)

Asp Glu Leu Arg Arg Lys Met Met Tyr Met or (SEQ ID No. 14)

Asp Glu Leu Arg Arg Lys Met Met Tyr Met (SEQ ID No. 14)

(each of the above sequences = reference sequence);

i.e., to induce the production of interferon- $\gamma$  or TNF- $\alpha$  in CD8<sup>+</sup> T cells, especially from subjects immunized with HCMV and having the appropriate HLA type.

Claim 2. (Currently Amended)      The peptides or peptide derivatives according to claim 1 having the sequence

R<sub>N</sub> - Ala Arg Ala Lys Lys Asp Glu Leu Arg Arg Lys Met Met Tyr Met- R<sub>C</sub> (SEQ ID No. 2)

R<sub>N</sub> - Asp Glu Leu Arg Arg Lys Met Met Tyr Met- R<sub>C</sub> (SEQ ID No. 3)

R<sub>N</sub> - Glu Leu Arg Arg Lys Met Met Tyr Met- R<sub>C</sub> (SEQ ID No. 9)

R<sub>N</sub> - Asp Glu Leu Arg Arg Lys Met Met Tyr - R<sub>C</sub> (SEQ ID No. 10)

R<sub>N</sub> - Asp Glu Leu Arg Arg Lys Met Met Tyr Met - R<sub>C</sub> (SEQ ID No. 14).

Claim 3. (Original)      The peptides or peptide derivatives according to claim 1, wherein said fragments are nonamers formed by truncating sequence (I) to nine contiguous amino acids, wherein the deletion is an N-terminal and/or C-terminal deletion and wherein the functionality of at least one peptide from the group of reference sequences is essentially met by said nonamer.

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Claim 4. (Currently Amended) Peptides having the sequence (II)

$R_N$  - Glu Phe Cys Arg Val Leu Cys Cys Tyr Val Leu Glu Glu Thr Ser-  $R_C$  (II) (SEQ ID No. 5)

or peptide derivatives thereof, wherein

$R_N$  represents -H or an amino protective group, or at least one further amino acid outside the peptide or peptide derivative;

$R_C$  represents -OH or a carboxy protective group, or at least one further amino acid outside the peptide or peptide derivative;

wherein said peptide derivatives have a deletion, insertion or substitution of one, two or three amino acids of sequence (II), or sequence (II) is truncated to nine contiguous amino acids, the deletion being an N-terminal and/or C-terminal deletion; and

wherein said peptide derivatives essentially have the functionality of the peptide of sequence (II) or of one of the following peptides:

Cys Arg Val Leu Cys Cys Tyr Val Leu (SEQ ID No. 6)

Arg Val Leu Cys Cys Tyr Val Leu Glu (SEQ ID No. 7)

Val Leu Cys Cys Tyr Val Leu Glu Glu (SEQ ID No. 8)

(each of the above sequences = reference sequence);

i.e., to induce the production of interferon- $\gamma$  or TNF- $\alpha$  in CD8<sup>+</sup> T cells, especially from subjects immunized with HCMV and having the appropriate HLA type.

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Claim 5. (Currently Amended) The peptides or peptide derivatives according to claim 1  
having the sequence

R<sub>N</sub> - Glu Phe Cys Arg Val Leu Cys Cys Tyr Val Leu Glu Gfu Thr Ser- R<sub>C</sub> (SEQ ID No. 5)

R<sub>N</sub> - Cys Arg Val Leu Cys Cys Tyr Val Leu - R<sub>C</sub> (SEQ ID No. 6)

R<sub>N</sub> - Arg Val Leu Cys Cys Tyr Val Leu Glu - R<sub>C</sub> (SEQ ID No. 7)

R<sub>N</sub> - Val LEW Cys Cys Tyr Val Leu Glu Glu - R<sub>C</sub> (SEQ ID No. 8)

Claim 6. (Original) The peptides or peptide derivatives according to claim 4, wherein said  
fragments are nonamers formed by truncating sequence (II) to nine contiguous amino  
acids, wherein the deletion is an N-terminal and/or C-terminal deletion and wherein the  
functionality of at least one peptide from the group of reference sequences is essentially  
met by said nonamer.

Claim 7. (Previously Presented) The peptides or peptide derivatives according to claim 1,  
wherein R<sub>N</sub> represents -H or an amino protective group and R<sub>C</sub> represents -OH or a  
carboxyl protective group.

Claim 8. (Original) The peptides or peptide derivatives according to claim 7, wherein R<sub>N</sub>  
represents -H or an acyl group and R<sub>C</sub> represents -OH or an amino group.

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Claim 9. (Original) The peptides or peptide derivatives according to claim 8, wherein  $R_N$  represents -H and  $R_C$  represents -OH.

Claim 10. (Previously Presented) The peptides or peptide derivatives according to claim 1 as a medicament or diagnostic agent.

Claim 11. (Currently Amended) ~~Method of using a peptide or peptide derivative according to claim 1 for vaccination~~ for vaccinating against HCMV infections, said method comprising administering an effective amount therefor of a peptide or peptide derivative according to claim 1 to a patient in need thereof.

Claim 12. (Currently Amended) ~~Method of using a peptide or peptide derivative according to claim 1 as a diagnostic agent for identifying a response of the cellular immune system against HCMV,~~ said method comprising:

- a) incubating T-cells with a peptide or peptide derivative according to claim 1; and
- b) detecting whether incubation has resulted in the production of interferon- $\gamma$  or TNF- $\alpha$  in CD8<sup>+</sup> T cells.

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Claim 13. (Currently Amended) ~~Method of using a peptide or peptide derivative according to claim 1 as a diagnostic agent for quantifying a response of the cellular immune system against HCMV, said method comprising:~~

- a) incubating T-cells with a peptide or peptide derivative according to claim 1;
- b) detecting whether the number of T cells that have been induced to produce interferon- $\gamma$  or TNF- $\alpha$  in CD8<sup>+</sup> T cells.

Claim 14. (Currently Amended) An isolated or purified DNA which codes for one of the amino acid sequences and their derivatives ~~a peptide or peptide derivative~~ according to claim 1.

Claim 15. (Currently Amended) ~~Vectors of plasmids~~ A plasmid or vector comprising a ~~into which the DNA according to claim 14 has been incorporated.~~

Claim 16. (Currently Amended) ~~A medicament~~ vaccine comprising a DNA according to claim 14 or a plasmid or vector comprising said DNA.